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ABSTRACT:

A superconductor ink, useful for forming a uniformly thick
 superconductor film having a uniform composition, comprises: (1) a cyclic
 aliphatic carboxylate (such as naphthenoate) and/or aliphatic carboxylate (such as
 2-
 ethylhexanoate) containing 2-15% of a trivalent rare earth metal (such as
 Y); (2) a cyclic aliphatic carboxylate (such as naphthenoate) and/or aliphatic
 carboxylate (such as 2-ethylhexanoate) containing 5-15% of an alkaline earth
 metal (such as Ba); (3) a cyclic aliphatic carboxylate (such as naphthenoate)
 and/or aliphatic carboxylate (such as 2-ethylhexanoate) containing 5-15% of
 Cu, Ag, Zn, Cr, Mn, Fe, Co, Bi, Ni, or Pb; (4) ≥ 1 of
 ethylcellulose resin, nitrocellulose, ethylhydroxycellulose, epoxy resin,
 acrylic resin, polystyrene resin, natural rosin, asphalt, terpene-type
 polymeric resin, alkyd. resin, urea resin, melamine resin, and synthetic rosin
 derivative resin; and (5) ≥ 1 of terpeneol, methanol, butylcarbitol, Me Et
 ketone, propylene glycol, ethylene glycol, cyclohexanone, Et acetate, benzyl
 acetate, amyl acetate, cellosolve, BuOH, nitrobenzene, toluene, xylene,
 petroleum ether, chloroform, CCl₄, pinene, dipentene, dipentene oxide, and
 essential oil.

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(54) SUPERCONDUCTING INK

(57)Abstract:

PURPOSE: To obtain superconducting ink capable of forming superconductive film having uniform thickness by several kinds of coating method by mixing naphthenic acid salt, etc., contg. a rare earth metal such as Y, etc., an alkaline earth metal such as Ba, etc., and Cu, etc., respectively, with several kinds of org. resin and org. solvent.

CONSTITUTION: A mixture of each cycloaliphatic carboxylic acid salts such as naphethate, etc., of a rare earth element having tervalent oxidized state such as Y, etc., an alkaline earth element such as Ba, etc., and a metal such as Cu, Ag, Zn, etc., is prepd. Further, said mixture is mixed with an org. resin such as ethyl cellulose resin, etc., and an org. solvent such as terpeneol. Obtd. superconducting ink has a uniform compsn., and the proportion of the components are easily controllable. Moreover, since the metal components such as Y, B, Cu, etc., are dissolved completely in the org. solvent in this superconducting ink, a superconductive film having 0.1W1.0 μ m uniform thickness and uniform compsn. is obtd. when the ink is coated on a substrate, then cooled slowly after calcining the coated ink at 800W1,000°C.

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